

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A semiconductor device having a pad formed by exposing a predetermined region of a metal line formed over a semiconductor substrate, the semiconductor device comprising:
an alloy layer formed on the metal line exposed through the pad, wherein the alloy layer is formed by a heat treatment at a contacting surface from a reaction between the metal line and a metal having a melting point less than or equal to 1000°C.
2. (original) The semiconductor device of claim 1, wherein the metal line is made of copper.
3. (original) The semiconductor device of claim 1, wherein the metal having the melting point less than or equal to 1000°C is selected from the group consisting of aluminum, lead, and silver.
4. (original) The semiconductor device of claim 1, wherein the thickness of the alloy layer is less than a thickness of the metal line.
5. (original) The semiconductor device of claim 1, wherein a protection layer made of one of silicon nitride and silicon oxynitride is formed on the metal line except where the pad is formed.
6. (original) The semiconductor device of claim 2, wherein the copper is filled in a via.

7. (original) The semiconductor device of claim 6, wherein a barrier metal is formed on an interface between the copper and the via made from a metal selected from the group consisting of Ti, Ta, TiN, and TaN having a thickness between 200 and 800Å to prevent the diffusion of the copper out of the via.

8. (original) The semiconductor device of claim 6, wherein a width of the pad is less than a width of the via.